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EXAMINER	
LAU, TUNG S	
ART UNIT	**PAPER NUMBER**
2863	

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/038,162	ORENSTIEN ET AL.	
	Examiner	Art Unit	
	Tung S Lau	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 8, 15, 19, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 16, 17, 18, 20-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Mittal et al. (U.S. Patent 5,719,800).

Regarding claim 1:

Mittal discloses a microprocessor comprising: at least one throttling mechanism (abstract); and a thermal control subsystem to estimate an amount of power used by said microprocessor and to control said at least one throttling mechanism based on said estimated power usage (abstract, Col. 3, Lines 4-35, Col. 1, Lines 28-67), wherein the thermal control subsystem is in communication with at least one counter and the thermal control subsystem estimates the amount of power used by the microprocessor based on information provided by the at least one counter (fig. 2, unit 205, fig. 1b, unit 102, 104, 101, 103, Col. 3, Lines 4-35, Col. 1, Lines 28-67).

Regarding claim 8:

Mittal discloses a method comprising: receiving information provided by at least one counter (fig. 2, unit 205); estimating an amount of power used by a microprocessor based on the information provided by the at least one counter; and controlling at least one throttling mechanism incorporated in the microprocessor based on said estimated power usage (abstract, Col. 3, Lines 4-35, Col. 1, Lines 28-67).

Regarding claim 15:

Mittal discloses a thermal control system comprising: a power usage estimator coupled to at least one counter (fig. 2, unit 205), the power usage estimator to estimate an amount of power used by a microprocessor based on information provided by the at least one counter (fig. 2, unit 205, abstract); and a throttling control unit to control at least one throttling mechanism incorporated in the microprocessor based on the estimated amount of power used by the microprocessor (abstract, Col. 3, Lines 4-35, Col. 1, Lines 28-67).

Regarding claim 19:

Mittal discloses a machine-readable medium that provides instructions, which when executed by a microprocessor cause said microprocessor to perform operations comprising: receiving information provided by at least one counter (fig. 2, unit 205, abstract); estimating an amount of power

used by a microprocessor based on the information provided by the at least one counter; and controlling at least one throttling mechanism incorporated in the microprocessor based on said estimated power usage (abstract, Col. 2-3, Lines 65-50, Col. 1, Lines 28-67).

Regarding claims 2, 9, 20, Mittal discloses the amount of power used by the microprocessor is estimated based on the number of occurrences of at least one activity performed in said microprocessor (Col. 1, Lines 20-51, fig. 1a, unit 106, fig. 5, unit 500).

Regarding claim 3, Mittal discloses thermal control subsystem includes a power usage monitoring unit which determines the number of occurrences of at least one activity performed by the microprocessor within a sampling time period and computes the estimated power usage based on (1) the count value associated with said at least one activity (fig. 1a, unit 106), (2) current clock frequency (Col. 1, Lines 36-51, Col. 5, Lines 1-12, Col. 7, Lines 26-35, Col. 8, Lines 25-33) and (3) operating voltage level of the microprocessor (Col. 1, Lines 36-45).

Regarding claims 4, 11, 22, Mittal discloses the power usage monitoring unit estimates the amount of the power used by the microprocessor by averaging the current estimated power usage value with a defined number of most recently estimated power usage values obtained during previous sampling time periods (Col. 3, Lines 18-27).

Regarding claim 5, Mittal discloses the thermal control subsystem further comprises a throttling control unit which compares said estimated amount of power used by the microprocessor against a threshold and activates the throttling mechanism if the estimated power used by the microprocessor is greater than said threshold or deactivates the throttling mechanism if the estimated power used by the microprocessor is less than said threshold (abstract, Col. 2-3, Lines 65-50).

Regarding claims 6, 13, 24, Mittal discloses the throttling mechanism is activated in a deterministic manner by the thermal control subsystem (Col. 2-3, Lines 65-50).

Regarding claims 7, 14, 25, Mittal discloses at least one activity monitored by the thermal control subsystem comprises at least one of the following activities; (1) floating point operation (fig. 2, unit 206), (2) cache memory access (fig. 3, unit 302, fig. 4, unit 302) and (3) instruction decoding (fig. 4, unit 306, 310, 402, Col. 2-3, Lines 65-50).

Regarding claim 10, Mittal discloses estimating the amount of power used by the microprocessor further comprises: counting the number of occurrences of at least one activity performed by the microprocessor within a sampling time period (fig. 3, unit 304, 305, 306); and adjusting the number of occurrences of said at least one activity according to current operating frequency and voltage level of the microprocessor (Col. 1, Lines 28-67, Col. 3, Lines 4-35).

Regarding claim 12, Mittal discloses comparing said estimated amount of power used by the microprocessor against a threshold (fig. 3, unit 306); activating said at least one throttling mechanism if said estimated power used by the microprocessor is greater than said threshold; and deactivating said at least one throttling mechanism if said estimated power used by the microprocessor is less than said threshold (Col. 3, Lines 4-35, fig. 3, unit 306, 310, 309) .

Regarding claim 16, Mittal discloses power usage estimator estimates the amount of power used by the microprocessor based on (1) the number of occurrences of at least one activity (fig. 3, unit 309), (2) current clock frequency (Col. 1, Lines 28-31) and (3) operating voltage level of the microprocessor (Col. 1, Lines 28-31).

Regarding claim 17, Mittal discloses a filter to adjust the estimated amount of power usage by applying recently estimated power usage values obtained during previous sampling time periods with the current estimated power usage value (Col. 3, Lines 4-27).

Regarding claims 18, 23, Mittal discloses throttling control unit compares said estimated amount of power used by the microprocessor against a threshold and activates the throttling mechanism if the estimated power used by the microprocessor is greater than said threshold or deactivates the throttling mechanism if the estimated power used by the microprocessor is less than said threshold (Col. 3, Lines 4-27, fig. 3, unit 306, 310).

Regarding claim 21, Mittal discloses the operation of estimating the amount of power used by the microprocessor further comprises reading count data representing (fig. 2, unit 205) the number of occurrences of at least one activity performed by the microprocessor within a sampling time period and adjusting the number of occurrences of said at least one activity according to current operating frequency and voltage level of the microprocessor (Col. 3, Lines 4-27).

Regarding claim 26, Mittal discloses at least one counter is implemented as a register in a hardware component (fig. 2, unit 205, 203, 201, fig. 4, unit 302, 310, 314, 308, 304, 305).

Regarding claim 27, Mittal discloses at least one counter is implemented as a variable in software code (Col. 3, Lines 4-18).

Response to Arguments

2. Applicant's arguments filed 6/2/2004 have been fully considered but they are not persuasive.

A. Applicant argues in the lengthy arguments that the prior art does not show the 'estimating an amount of power used by a microprocessor based on information provided by a counter'. Mittal discloses 'estimating an amount of power used by a microprocessor based on information provided by a counter' (Col. 1, Lines 28-67, fig. 2, unit 2, abstract).

B. Applicant continues to argue in the lengthy arguments that the prior art does not show the 'controlling a throttling mechanism incorporated in the microprocessor based on estimated power usage'. Mittal discloses 'controlling a throttling mechanism incorporated in the microprocessor based on estimated power usage' in (Col. 3, Lines 4-27).

C. Applicant continues to argue in the lengthy arguments that the prior art does not show the 'estimated power usage based on (1) the count value associated with said at least one activity, (2) current clock frequency and (3) operating voltage level of the microprocessor'. Mittal discloses 'estimated power usage based on (1) the count value associated with said at least one activity (fig. 1a, unit 106), (2) current clock frequency (Col. 1, Lines 36-51, Col. 5, Lines 1-12, Col. 7, Lines 26-35, Col. 8, Lines 25-33) and (3) operating voltage level of the microprocessor (Col. 1, Lines 36-45)'.

C. Applicant continues to argue in the lengthy arguments that the prior art does not show 'estimating the amount of power used by the microprocessor by adjusting the number of occurrences of at least one activity according to current operating frequency and voltage level of the microprocessor'. Mittal discloses 'estimating the amount of power used by the microprocessor by adjusting the number of occurrences of at least one activity according to current operating frequency and voltage level of the microprocessor' in Col. 1, Lines 27-67 and Col. 3, Lines 4-27, fig. 1a, unit 108, fig. 1b, unit 102.

Reminds to the applicants that during patent examination, the pending claims must be "given the broadest reasonable interpretation consistent with the specification." Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969). While the meaning of claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allowed. This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). When not defined by applicant in the specification, the words of a claim must be given their plain meaning. In other words, they must be read as they would be interpreted by those of ordinary skill in the art. > Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342, 60 USPQ2d 1851, 1854 (Fed. Cir. 2001)

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 571-272-2274. The examiner can normally be reached on M-F 9-5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5841 for Official RightFAX, for regular communications and 703-308-5841 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2815. TC2800 FAX Telephone Numbers: 703-872-9306

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TL

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